REMARKS/ARGUMENTS

Favorable reconsideration of the present application is respectfully requested.

Claims 1, 4 and 6 have been amended responsive to the rejection under 35 U.S.C. §112. Claims 1, 4 and 6 have also been amended to recite that the mixed molten salt in the electrolyte may be solidified in the hydrogen fluoride gas feed line. Basis for this is found at page 2, lines 6-7 and 23-30.

The claims recite an inert gas substitution means for eliminating the hydrogen fluoride gas remaining in at least part of the hydrogen fluoride (HF) gas feed line on a side downstream from said first automatic valve. As a threshold matter Applicants again note that the structure disclosed in the specification as corresponding to the inert gas substitution means is the inert gas feed line 91 (Fig. 2) which connects the inert gas storage tank 92 to the HF gas feed line 24 downstream of the first automatic valve 81. That is, as is described beginning at line 13 of page 9, when a HF gas feeding interrupting mechanism operates to stop HF gas feeding, the first automatic valve 81 is closed and the automatic valve 74 in the inert gas feed line 91 is opened so that the inert gas fed from the inert gas storage tank 92 at a constant pressure is fed into the HF gas feed line 24 on the side downstream from the first automatic valve 81.

The inert gas line (Fig. 2) that connects the inert gas storage tank 92 to the HF gas feed line 24 upstream of the first automatic valve 81, on the other hand, does not correspond to the "inert gas substitution means."

Moreover, it is respectfully submitted that there is no discrepancy between this and the description at lines 19-22 of page 6 that the "inert gas feed line 91, the inert gas storage tank 92, the second automatic valve 73, the automatic valve 74, and an HF GAS feeding interruption detecting means constitute an inert gas substitution means." This portion of the specification does not describe that the inert gas line upstream of the first automatic valve 81

is part of the inert gas substitution means. Moreover, it is evident from the inert gas substitution function described on page 9 that the described elements other than the inert gas feed line 91 only contribute to the inert gas substitution function to the extent that they control the inert gas flowing through line 91 to a location downstream of the first automatic valve 81 on the occasion of interruption of hydrogen fluoride gas feeding.

Claims 1-9 were again rejected under 35 U.S.C. §103 as being obvious over Tojo et al in view of Saito et al. This is again respectfully traversed.

The claims were previously rejected over this same prior art, which rejection was traversed in the last response. These arguments are hereby maintained and repeated by reference. The outstanding Office Action indicates, however, that they were not found to be persuasive.

The apparent point of dispute is whether one skilled in the art would have considered it obvious from Saito et al to have modified Tojo et al such that the inert gas feed line from the inert gas cylinder 18 of Tojo et al has a further branch connecting to the HF gas feed line downstream from the unillustrated HF gas feed cut-off valve, for substituting an inert gas on the occasion of interruption of HF gas feeding. According to the rejection in the current Office Action, this would have been obvious because the "whole system" of Tojo et al is purged with inert gas from the existing purge port 14, including the downstream part of the HF feed line, and because the purge gas sources 36a and 36b in Saito et al connect to the reactant gas feed lines downstream from their cut-off valves.

It is respectfully submitted, however, that this rejection mischaracterizes the teachings of Tojo et al and fails to consider or appreciate the unpredictable improved result of the invention:

In fact, the "whole system" of Tojo et al, including the HF gas feed line, is **not** purged with inert gas from the existing purge port 14 when the end of the HF gas feed line is

disposed in the electrolyte in the electrolytic bath. Conversely, at those times when the "whole system" of Tojo et al is purged with inert gas from the existing purge port 14, the HF feed line is **not** disposed in the electrolyte in the electrolytic bath. That is, according to the description at lines 38-50 of col. 9 in Tojo et al, the fluid level shown in Fig. 4 exists when the purge gas is first introduced. In this case, the HF gas line will **not** be purged by the gas from port 14 because its end is immersed in the bath. Then, as the electrolyte level of the anode chamber 7 falls to that shown in Fig. 2, the end of the HF gas feed line will no longer be disposed in the electrolyte in the electrolytic bath, as is required in the claims. In no case does Tojo et al disclose a system wherein the inlet of an HF gas feed line is "disposed in an electrolyte in an electrolytic bath," and in which HF gas feed line is purged with inert gas from the existing purge gas port 14.

Instead, the HF feed line in Tojo et al, having the immersed end, will trap HF gas downstream of the cut-off valve. Also, as Tojo et al fails to appreciate, the negative pressure in the immersed HF feed line downstream of the cut-off valve will draw electrolyte from the bath into the HF gas feed line, which electrolyte may be solidified and clog the line (see present specification, p. 2, lines 23-30). Tojo et al thus fails to appreciate the problem to be solved by the invention, and so fails to propose a solution.

Saito et al is also incapable of appreciating this problem, or suggesting a solution. Unlike Tojo et al, Saito et al does not teach a system having an electrolyte bath. Instead, Saito et al purges the reactant gas lines with inert gas (N_2) to prevent environmental pollution as the reaction vessel is returned from a vacuum to atmospheric pressure. That is, N_2 gas is introduced into the reaction tube when it is in a vacuum state. Therefore, the problem of backflow and solidification of a liquid due to a negative pressure downstream of the cut-off valves VB1-VB2 would not arise in Saito et al. Similarly, an inert purge gas introduced into

in the reaction chamber of Saito et al could reach any portion of the reaction gas line downstream of a cut-off valves VB1-VB2.

Since Tojo et al already has a purge gas system, since there is no teaching in the art that this purge gas system is problematic, and since the purge gas connection of Saito et al therefore would not be expected to improve the existing purge gas system of Tojo et al, one skilled in the art would have been given no motivation from the purge gas connection in Saito et al to modify Tojo et al according to the claimed invention.

Moreover, only the present application recognizes the aforementioned problem or proposes a solution: the claimed inert gas substitution means. The result of the present would therefore have been unexpected or unpredictable from the state of the prior art, which is clear evidence of unobviousness.

The Office Action states that one skilled in the art would have considered it obvious from Saito et al to have modified Tojo et al such that the inert gas feed line from the inert gas cylinder 18 of Tojo et al has a further branch connecting to the HF gas feed line downstream from the unillustrated HF gas feed cut-off valve because "doing so would allow one to completely purge the apparatus including the HF feed line." However, it may be appreciated from the above explanation of Tojo et al that no such motivation would in fact exist. The purge gas from the existing purge port 14 of Tojo et al will lower the electrolyte level in the anode chamber 7 to that of Fig. 2 (col. 9, lines 45-50), whereby the HF gas feed line will no longer be immersed in the electrolyte. This would allow one to completely purge the apparatus including the HF feed line without any modification.

Nor could such a modification be deemed to be obvious – simply because Saito et al connects the purge lines to the reactant gas feed lines – as the use of a known technique with predictable results. As already explained, connecting an inert gas substitution means to a HF

gas feed line disposed in an electrolyte in an electrolytic bath in fact provides an *unpredictable* improved result.

Finally, Applicants note that explanation on pp. 10-11 of the Office Action that Applicants' prior explanation of unpredictable improved results had not been considered persuasive because "the [rising] backflow [in Tojo et al] would reach the HF feed line before it reaches the discharges ports." However, as Tojo et al explains at lines 38-50 of col. 9, once electrolysis is halted (whereby the HF feed line is closed), the purge gas from inlet 14 will lower – not raise – the electrolyte level. Thus, there is no rising backflow and the problem to be solved by the invention would not arise in Tojo et al.

Applicants therefore believe that the present application is in a condition for allowance and respectfully solicit an early notice of allowability.

Respectfully submitted,

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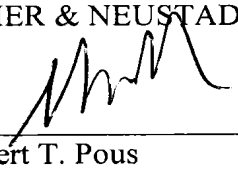

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